

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE



In re application of:
Sarkis TOKATLIAN

Appl. No.: 10/715,115

Confirmation No.: 3992

Filed: November 18, 2003

For: SUB AQUA BREATHING
SYSTEM

Art Unit: 3743

Examiner: Not Yet Assigned

Atty. Docket No.: 32406-198948

Customer No.

26694

PATENT TRADEMARK OFFICE

Submission of Certified Copy of Priority Document

Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

Sir:

Submitted herewith is a certified copy of Application No. 0112244.9 filed on May 18, 2001 in Great Britain the priority of which is claimed in the present application under the provisions of 35 U.S.C. 119.

Date: 5/6/04

Respectfully submitted,



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INVESTOR IN PEOPLE

The Patent Office
Concept House
Cardiff Road
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I also certify that the attached copy of the request for grant of a Patent (Form 1/77) bears an amendment, effected by this office, following a request by the applicant and agreed to by the Comptroller-General.

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Signed *Andrew Gensz*
Dated 27 January 2004

32406-198948
Sarkis TOKATLIAN
10/715, 115

Patents Form 1/77

Patents Act 1977
(Rule 16)

18 MAY 2001



21MAY01 E630734-1 C73246
P01/7700 0.00-0112244.9

1/77

Request for grant of a patent

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The Patent Office

Cardiff Road
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1. Your reference

ST/LD001

2. Patent application number

(The Patent Office will fill in this part)

0112244.9

3. Full name, address and postcode of the or of each applicant (underline all surnames)

MR. SARKIS TOKATLIAN
THE GARDEN FLAT
58. HOLLAND ROAD
KENSINGTON
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W14. 8BB.

Patents ADP number (if you know it)

If the applicant is a corporate body, give the country/state of its incorporation

8150070001

4. Title of the invention

SUB AQUA BREATHING SYSTEM

5. Name of your agent (if you have one)

"Address for service" in the United Kingdom to which all correspondence should be sent (including the postcode)

~~THE GARDEN FLAT~~
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Venner, Shipley
& Co
20 Little Britain
London
EC1A 7DH.

Patents ADP number (if you know it)

00001669004

~~8150070001~~ Siff 22.4.02 SEP.

6. If you are declaring priority from one or more earlier patent applications, give the country and the date of filing of the or of each of these earlier applications and (if you know it) the or each application number

Country

Priority application number
(if you know it)

Date of filing
(day / month / year)

NIA

7. If this application is divided or otherwise derived from an earlier UK application, give the number and the filing date of the earlier application

Number of earlier application

Date of filing
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NIA

8. Is a statement of inventorship and of right to grant of a patent required in support of this request? (Answer 'Yes' if:

No

- a) any applicant named in part 3 is not an inventor, or
- b) there is an inventor who is not named as an applicant, or

Patents Form 1/77

9. Enter the number of sheets for any of the following items you are filing with this form.
Do not count copies of the same document

Continuation sheets of this form **NONE**

Description **2**

Claim(s) **2**

Abstract **1**

Drawing(s) **5**

10. If you are also filing any of the following, state how many against each item.

Priority documents

Translations of priority documents

Statement of inventorship and right to grant of a patent (Patents Form 7/77)

Request for preliminary examination and search (Patents Form 9/77) **1**

Request for substantive examination (Patents Form 10/77)

Any other documents (please specify)

11. I/~~we~~ request the grant of a patent on the basis of this application.

Signature



Date **18/5/2001**

12. Name and daytime telephone number of person to contact in the United Kingdom

MR. SARKIS TOKATLIAN **MOBILE.**
TEL: 020-7603-9999 / 07836-255530

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Sub-Aqua Breathing System.

My invention relates to a sub-aqua breathing system which allows a person operating underwater to breathe air from a compressed air tank supported on the water surface.

There are many occasions when it is desired to operate below the water surface, for example when freeing the propellers of water craft entangled with fishing nets, lines, or weed, etc. in rivers or streams; for the inspection of vessel hulls; for the rescue of people trapped below the water surface in swimming pools, or from cars or vessels sunk in rivers or docks; or for sporting purposes.

Normally sub-aqua or 'SCUBA' equipment can be used in such situations but such equipment is heavy and cumbersome to operate and manoeuvre, and because of its expense cannot be readily available at all locations.

Recently there have been developments where floating members, similar to large life buoys or rubber dinghies, support a petrol engine, or batteries and an electric motor, driving an air pump which feeds a hose, possibly via an air receiver, with a mouthpiece regulator at the remote end of the hose. Such devices are cumbersome and heavy to transport and are expensive.

My invention is designed to overcome the drawbacks of the prior art described above and comprises a housing adapted to contain both buoyant material and a toroidal compressed air tank, said tank being connectable to, or connected to, a conventional air line feeding a conventional mouthpiece regulator. In a preferred embodiment the air line is coiled and accommodated in, or on, the housing, and said housing is of disc-like form and contains the buoyant material in the form of floats near its outer periphery, the floats being fixed, or movable radially outwardly from the housing to keep the housing more stable on the water surface.

The drawings show a preferred embodiment of my invention in which:-

Fig. 1 shows a general view of the equipment packed for storage or transport to the point of use,

Fig. 2 shows a plan view,

Fig. 3 shows a front view,

Fig. 4 shows a bottom view

Fig. 5 shows a vertical section through the equipment.

With reference to the drawings the equipment comprises a two part, light weight plastics, injection molded housing (1) enclosing a toroidal compressed air tank (2), and buoyant material (3). The bottom part (4) of the housing has a central disc-like rotating portion (5) with apertures

(6) through one of which the air line (7) extends, the air line being coiled inside the housing and fed out, or wound up inside the housing, by rotation of the central rotating portion (5) in one direction or the other. The air line may be 10M long, and can be extended by the addition of 1 or 2 additional 10M lengths. The top part (8) of the housing has a central portion (9) arranged so that it can be removed to reveal a chamber which contains the main compressed air control valve (15) and may also contain a telescopic mast carrying the conventional 'diver working below' pennant. The mast can be removed and engaged in a socket in the top of the housing to extend vertically upwardly therefrom.

The buoyant material may be a single body within the housing, outside the toroidal air tank (2), or a number of separate floats (3) equally spaced about the periphery of the toroidal tank and having their radially outer surface contiguous with and forming, or being attached to, a separate section of the outer surface of the housing. The separate floats can, as shown, be mounted so as to be movable radially outward when a valve, controlled by a button (10), feeds air from the tank (2) to inflate air bags (11), mounted between the float (3) and the air tank (2), the floats being retracted by suitable springs (not shown) when a second button (12) is pressed to cause dumping of the air in the bags via a second valve.

Hand grips (13) are provided at circumferential positions about the periphery of the housing, e.g. between the extensible floats, to allow easy carrying of the assembly, and to provide support for the user when they surface.

The device can be supplied with suitable air line systems to support 2 or 3 users for specific purposes, such as for SCUBA training purposes to allow trainees to become accustomed to breathing underwater without suffering the encumbrance of the air supply tank, or for sub-surface rescue where one mouthpiece regulator may be replaced by a regulator connected to a breathing mask for use by the person being rescued. The air tank contains sufficient compressed air to allow use by a single diver for about 2 hours before recharging is required, although for use with multiple or branched air lines supporting multiple users the duration of use will be proportionally reduced. A pressure gauge (14) is provided to indicate the air pressure in the tank.

While a particular embodiment of the invention has been described above it will be clear that alternative forms of construction would occur to those skilled in the art, such alternatives are intended to be within the scope of the invention which is defined by the following claims.

CLAIMS.

1. A sub-aqua breathing system comprising a housing containing both buoyant material and a toroidal compressed air tank, said tank being connectable to, or connected to, a conventional air line feeding a mouthpiece regulator.
2. A sub-aqua breathing system as claimed in claim 1 in which the air line is coiled and accommodated in, or on, the housing.
3. A sub-aqua breathing system as claimed in claim 1 or claim 2 in which the housing is of discus like shape.
4. A sub-aqua breathing system as claimed in any preceding claim in which the coiled air line, in storage, lies horizontally within the housing above a bottom cover portion of the housing.
5. A sub-aqua breathing system as claimed in claim 4 in which the bottom cover is mounted for rotation in the horizontal plane and has at least one aperture through which the air line extends such that the line is wound up in the coil, or unwound from the coil, by rotation of the bottom cover in one direction or the other.
6. A sub-aqua breathing apparatus as claimed in any preceding claim in which the top of the housing has a top cover portion over a storage compartment.
7. A sub-aqua breathing system as claimed in claim 6 in which the storage compartment contains the main compressed air control valve and a telescopic mast with a pennant attached, which mast can be removed from the compartment and plugged or screwed into a socket provided in the top of the housing.
8. A sub-aqua breathing system as claimed in any preceding claim in which the buoyant material extends around the outer periphery of the toroidal air tank.
9. A sub-aqua breathing system as claimed in claim 8 in which the buoyant material is in the form of equally circumferentially spaced, sections, the radially outer surfaces of at least two of which form, or are attached to, separate circumferential outer sections of the housing, and the buoyant material of said sections forms separate floats which can be deployed radially outward of the main body of the housing.
10. A sub-aqua breathing system as claimed in claim 9 in which the floats are deployed radially outward by the inflation of air bags mounted between the floats and the toroidal air tank.
11. A sub-aqua breathing system as claimed in claim 10 in which the inflation of the air bags is controlled by a manually operated valve in a line between the compressed air tank and the air bag, the floats moving outwardly against the action of springs which restore the floats to the inner position when a second manually operated valve is operated to dump the air in the bags.

12. A sub -aqua breathing system substantially as described with reference to the accompanying drawings.

ABSTRACT.

Sub-Aqua Breathing System

A sub-aqua breathing system, which enables a person operating underwater to breathe air from a compressed air tank supported on the water surface, comprises a housing containing both a buoyant material and a toroidal compressed air tank connected to an air line feeding a conventional mouthpiece regulator. The air line may be coiled and stored within or on the housing. Preferably the housing is of discus like shape with the buoyant material in the form of floats normally nested within the housing, radially outward of the toroidal tank, but optionally deployable radially outward to increase stability when the device is floating on a water surface. The coiled air line can be stored horizontally at the bottom of the housing above a rotating cover through which the air line passes so that rotation of the cover coils or uncoils the air line. The top of the housing has a cover over a storage compartment which contains the main compressed air control valve and may contain a telescopic mast carrying a diving pennant.

FIG. 1

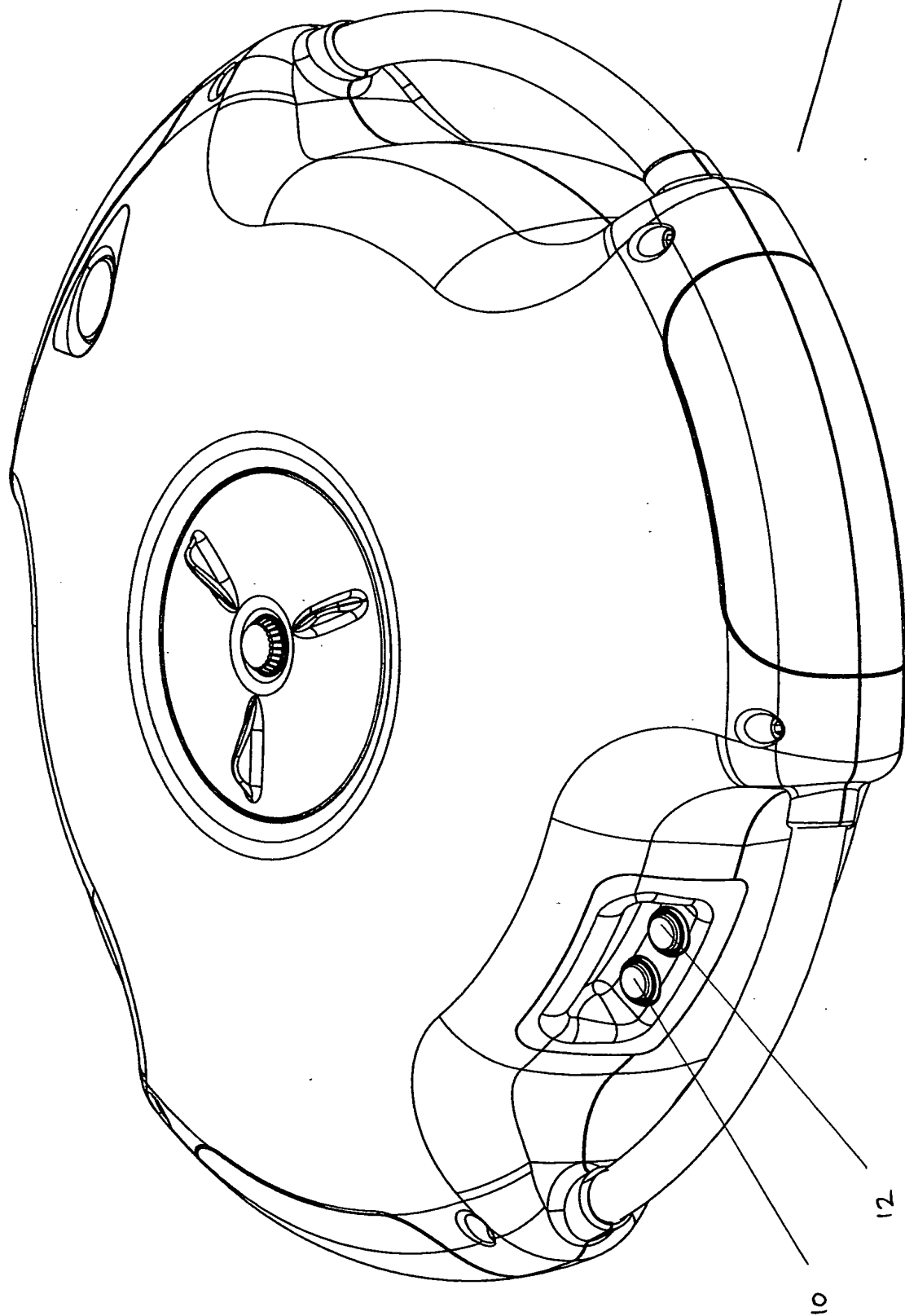


FIG 2

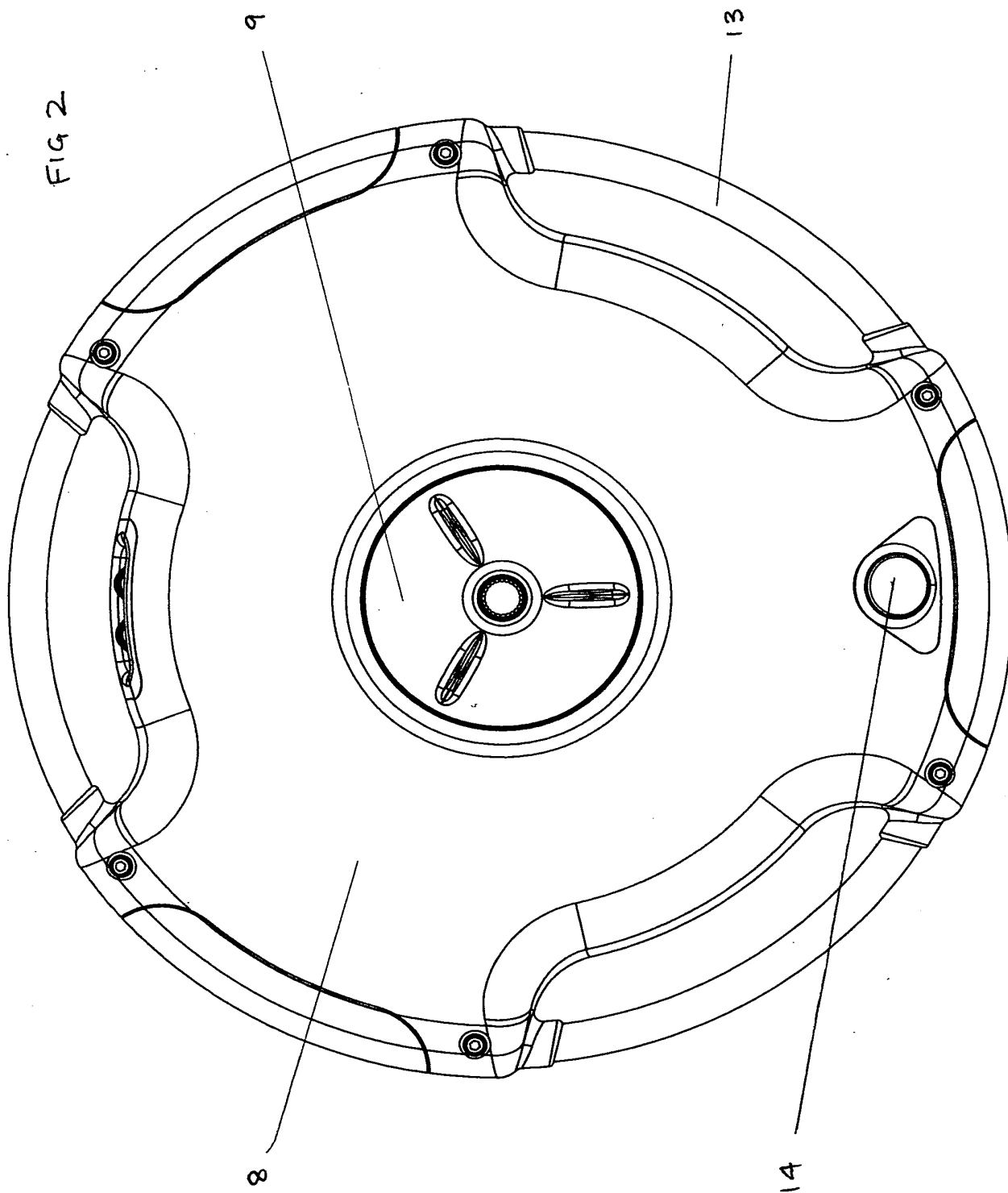


FIG 3

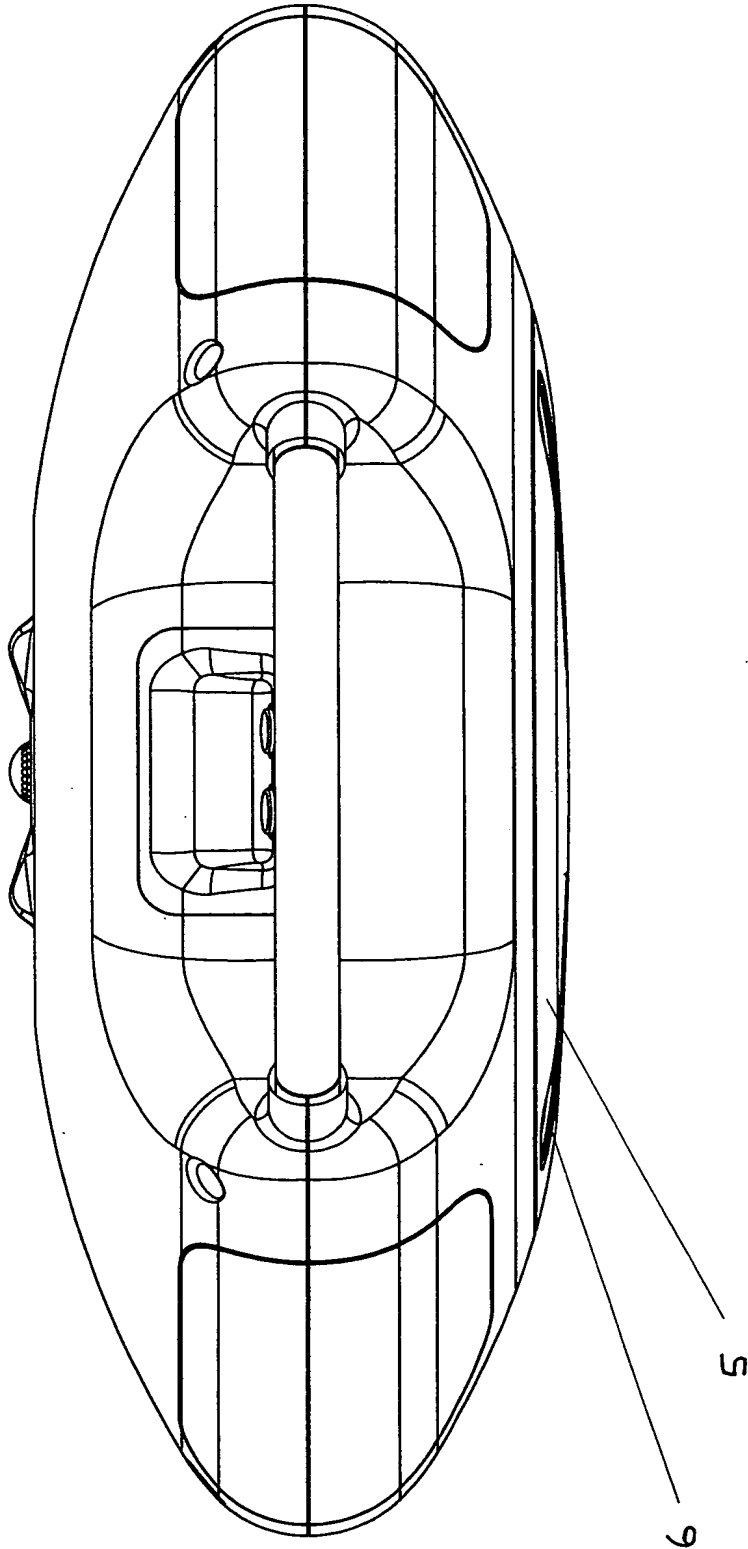
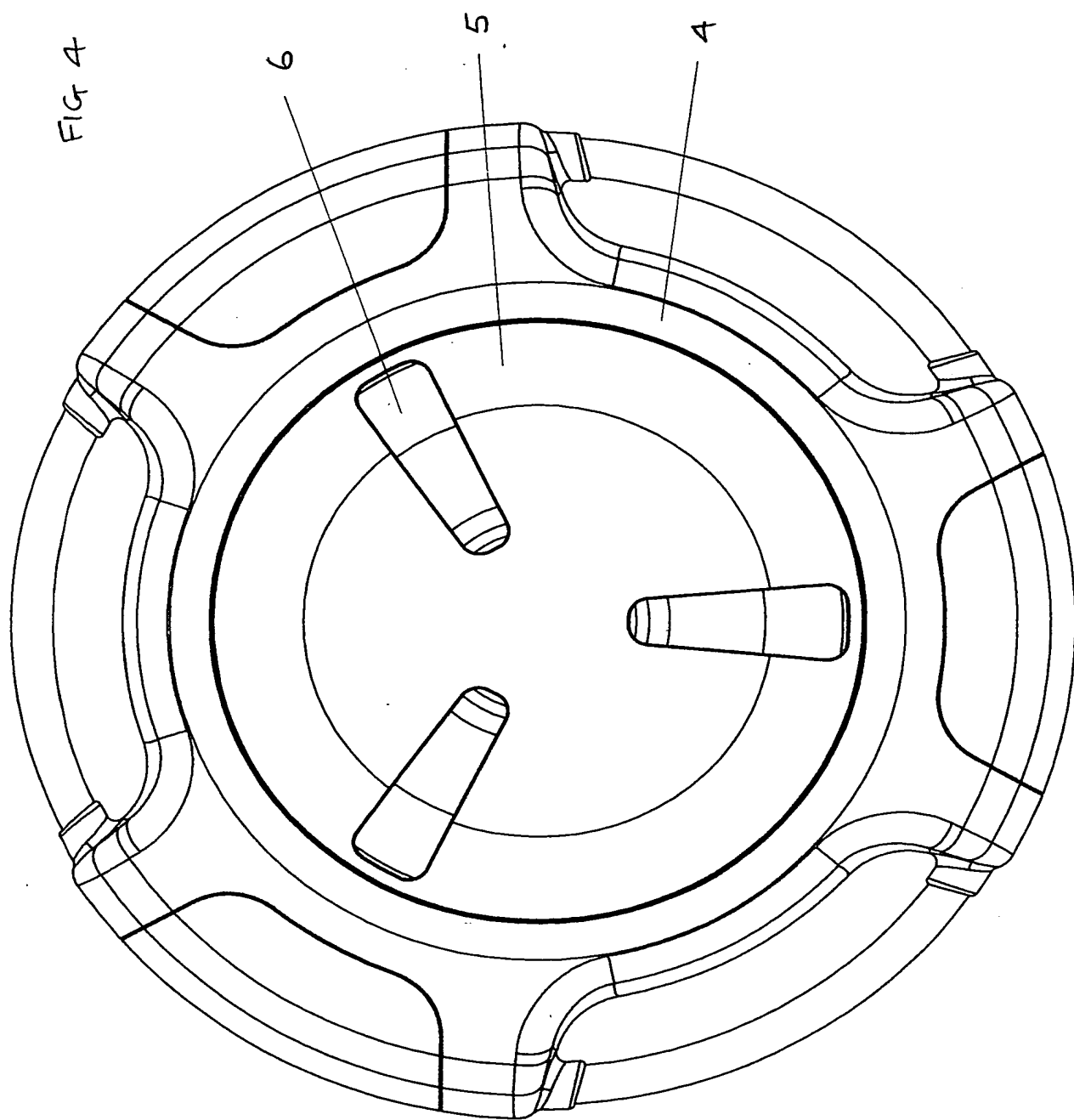


FIG 4



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FIG 5

